SALIENT CHARACTERISTICS
Portable High Speed PC Based Data Acquisition System

1. Scope: These specifications set forth the Government's minimum requirements for a High Speed (simultaneous sampling at 2.5 MHz per channel) PC-based data acquisition system for mobile operations, suited for high frequency or transient applications. The included software should provide integrated setup, control, networking, data acquisition, storage, display, and export. The system shall provide precisely time stamped.data The high speed acquisition system will be used by the Electronics Division Yuma Test Center.
2. Configuration: The system shall be turn-key, configured of standard commercial off the shelf, catalog advertised items, and shall meet or exceed all of the following specifications. The System Shall be a Daqscribe DDR-1500, brand name or equal http://www.daqscribe.com .
3. Capability: The System shall be rugged and field deployable for use in desert terrain environments.
4. Hardware Specifications:
   4.1. All hardware should be commercially off the shelf (COTS) component.
   4.2. Digital Data Recording:
      4.2.1. Data timing integrity shell be guaranteed for gap-free data recording (to a mass storage device) that supports the max sampling rate and max number of channels, even in a Windows based software environment .
      4.2.2. Transient Data recording
         4.2.2.1. Data channels shell have the ability to record a defined amount of pre-trigger data.
         4.2.2.2. Data channels shell have the ability to only record for a pre-defined post-trigger data
         4.2.2.3. Triggering: Level thresholds, channel combinations, repeated or single events, etc
      4.2.3. Continuous data recording be done in the same manor as a tape recorder. Duration will depend on disk space, channel count, and sample rate.
      4.2.4. Channel Count: min 32 channels of analog input, upgradeable to 64 channels.
      4.2.5. Maximum sampling rate: 2.5 Million samples per second per channel or greater
      4.2.6. Sampling clock: should be provided by either an internal programmable clock or external sampling clock
      4.2.7. Analog to digital converters (ADC)
         4.2.7.1. Acquisition resolution: 24-bit up to 100 kHz, 16-bit up to 2.5 MHz
         4.2.7.2. Use 16 Bit Sigma-Delta ADC per channel (Sigma Delta ADC)
      4.2.8. Analog Inputs

4.2.8.1. No multiplexing of inputs
4.2.8.2. Input connection: standard Fully-isolated BNC jack
4.2.8.3. Input type: Differential or single-ended
4.2.8.4. Input range: Selectable up to 20 Volts Peak to Peak (VPP) with a lest 5 setting (i.e. 5 VPP, 0 to 5V,10 VPP,0 to 10V)
4.2.8.5. Input impedance: >1 Meg Ohm.
4.2.9. Event time stamping: Using GPS time source.

4.3. PC
4.3.1. Processor: Minimum 2.6 GHz dual Xeon processor
4.3.2. Memory 4 Gigabyte RAM (minimum)
4.3.3. Operating system (OS): Windows XP Pro.
4.3.4. Mass storage
4.3.4.1. Hard drives (HD) will be coved under warranty, **No hard drives will returned in case of failure.** Failed HD will be available for inspection and testing on site with a representative from the Electronics Division.
4.3.4.2. Disk will be formatted as NTFS
4.3.4.3. 80 gigabyte hard drive minimum. Used for Booting, Storing OS and applications.
4.3.4.4. Removable large capacity disk-based RAID storage using a minimum of 6 each larger HD (totaling a minimum of 2 Terabyte) for data storage only. One HD will be used as a hot swap.
4.3.4.5. Ability to store data on network storage.

4.3.5. Peripherals:
4.3.5.1. Dual Gigabit Ethernet (Cat 5)
4.3.5.2. Video built-in 20" LCD or bigger
4.3.5.3. Audio
4.3.5.4. USB (min 2)
4.3.5.5. RS-232
4.3.5.6. DVD R/W
4.3.5.7. Keyboard/touchpad Built-in 20.1" LCD
4.3.5.8. Expansion: 2 or more unused PCI slot

5. Software
5.1. Supplied software should be both easy to use and simple to configure, allowing users to manage all aspects of their test data.
5.2. Setup
5.2.1. Software provides powerful configuration and control of any data acquisition system in a user friendly and allowing for complete test control from a single software package All aspects of the test setup should be able to manipulated and stored for later viewing or recalled as a common test configuration.
5.2.2. Channel set up can be loaded from a previously store set of parameters, spreadsheet or copied across channels with the click of a button.

5.2.3. Displays Data in real-time as viewed on an oscilloscope or a strip chart recorder, providing the user with different choices to visualize the test data. This display should work at any time before, after, and during data recording.

5.3. Acquisition

5.3.1. Acquisition data shell be able to previewed, recorded, and quickly replayed using VCR like controls.

5.3.2. Should display functional status of data recorder.

5.3.3. Should display data in real-time as it recording

5.4. Data Conversion

5.4.1. The Data Conversion software be DDR Data Export Utility Software, brand name or equal

5.4.2. Shall do conversion to major party analysis packages such as MATLAB, DADiSP, LabVIEW, Comma delimited file (CSV file), Pulse code modulation (PCM), Wave file.

5.4.3. Data Viewer

5.4.4. The Data Viewer Shall be DPlot Viewer, brand name or equal http://www.dplot.com

6. General: All hardware and software shall satisfy the following requirements.

6.1. Chassis: Ruggedized and suitable for field use, in a desert environment. Includes lifting/carrying handle(s).

6.2. Climatic: Remote, desert, indoor and mobile. 0° to 50°C (-20° to 70°C storage), 5% to 95% RH non-condensing.

6.3. Mechanical: Firing sites with moderate indoor dust levels. Recurring 10g. 10 ms mechanical shock impulses.

6.4. Electrical: Power 110 to 130 VAC, 50 to 70 Hz

6.5. Documentation: You shall provide a user's manual fully describing setup, usage, and maintenance for all functions, hardware, and software. Manual shall be installed in the portable DAQ unit and provided as hardcopy and CD-ROM. All necessary OEM software shall be installed in the system and provided on CD-ROM.

6.6. Warranty: Standard commercial 90 calendar day warranty (one year warranty desired)